

PARTS LIST AND DESCRIPTION (CONTINUED)
(When ordering parts, state Model, Part Number, and Description.)

COILS (RF-IF)

| ITEM No. | FUNCTION | REPLACEMENT DATA | | | REMARKS |
|----------|----------------------|------------------|----------------------|-----------------|---------|
| | | PART No. | OTHER IDENTIFICATION | MILLER PART No. | |
| L1 | FM Antenna | CA-3306 | 411M504 | | |
| L2 | FM RF | CA-4585 | 412M503 | | |
| L3 | RF Choke | CA-2276 | 111M077 | | |
| L4 | FM Oscillator | CA-4584 | 111M160 | | |
| L5 | Loopstick | CA-3305 | 411M507 | | |
| L6 | AM Oscillator | CA-4583 | 113M248 | | |
| L7 | 19kHz Input | CB-0069 | 11PN001 | | |
| L8 | 38kHz Output | CB-0135 | 412N016 | | |
| T1 | FM Input Input | CA-6300 | 11LD105 | | |
| T2 | Ratio Detector (Pri) | CA-6887 | 11DM060 | | |
| T3 | Ratio Detector (Sec) | CA-6796 | 11EM060 | | |
| T4 | AM Input IF (Sec) | CA-7456 | 11AM004 | | |
| T5 | AM Output IF | CA-7457 | 11CM502 | | |
| T7 | AM Input IF (Pri) | CA-7456 | 11AM004 | | |

TRANSFORMER (Power)

| ITEM No. | RATING | | REPLACEMENT DATA | | | NOTES |
|----------|--------------------|------------------------|------------------|---------------------|----------------|-------|
| | PRI. | SEC. 1 | MFGR. PART No. | THORDARSON PART No. | TRIAD PART No. | |
| T6 | 120V AC @ .09A AC | 33.7V AC CT @ 1.09A DC | TA-0476 | | | |
| | SEC. 2 | SEC. 3 | | | | |
| | 5.5V AC @ .245A AC | | | | | |

SPEAKER

| ITEM No. | TYPE | REPLACEMENT DATA | | NOTES |
|----------|--------------|------------------|---------------|---------------------|
| | | MFGR. PART No. | QUAM PART No. | |
| SP1 | 4" PM 8 ohms | 4520503 (1) | | (1) Number on unit. |
| SP2 | 4" PM 8 ohms | 4520503 (1) | | |

MISCELLANEOUS

| ITEM No. | PART NAME | PART No. | NOTES |
|----------|-----------------------|----------|---|
| CF | Filter | C-0602 | 10.7MHz |
| K1 | Solenoid | S-9059 | Head Shift |
| M1 | Head | H-4257 | 8-Track Stereo Play |
| M2 | Motor | M-4306 | Tape Transport (2300 rpm @ 18.88V DC) |
| SW1 | Switch | S-0646 | Power |
| SW2 | Switch | S-2262 | Function, AM-FM-FM Stereo -Phono-Tape |
| SW401 | Switch | 1610922 | Program Indicator (actuated by head-shift solenoid) |
| SW402 | Switch | RT-0156 | Manual Program Select |
| SW403 | Switch | S-0665 | Automatic Program Select (actuated by foil on tape) |
| SW404 | Switch | S-0664 | Tape Power (actuated by insertion of cartridge) |
| | Power Cord | W-1001 | AC |
| | Printed Circuit Board | 4010542 | Tuner |
| | Printed Circuit Board | 4610518 | Tape |

CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

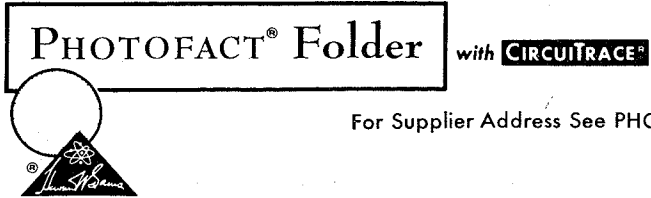
| ITEM | PART No. | ITEM | PART No. |
|--------------------|----------|------------------------------------|----------|
| Cabinet | 27CE083 | Knob, Balance/Tone/Volume/Function | K-1824 |
| Back, Cabinet | 24CE080 | Button, Power | K-1825 |
| Knob, Tuning | K-1822 | Knob, Program Select | K-1871 |
| Cover, Tuning Knob | K-1823 | | |

WIRING DATA

| | |
|--|--|
| General-use Unshielded Hook-up Wire | Use BELDEN No. 8528 (Solid) Available in 12 Colors |
| Power Cord | 8522 (Stranded) Available in 12 Colors |
| Low-loss Shielded Lead (Interconnecting) . | Use BELDEN No. 17106 (Plastic) or 17126 (Rubber) - 6 Ft. |
| | 17109 (Plastic) or 17129 (Rubber) - 9 Ft. |
| | Use BELDEN No. 8401 or 8421 |

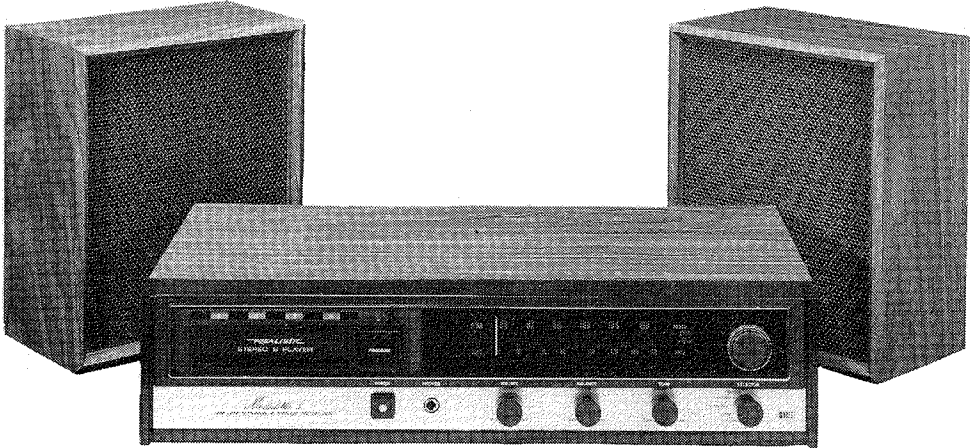
SET 1572 FOLDER 3

REALISTIC MODEL 12-1402

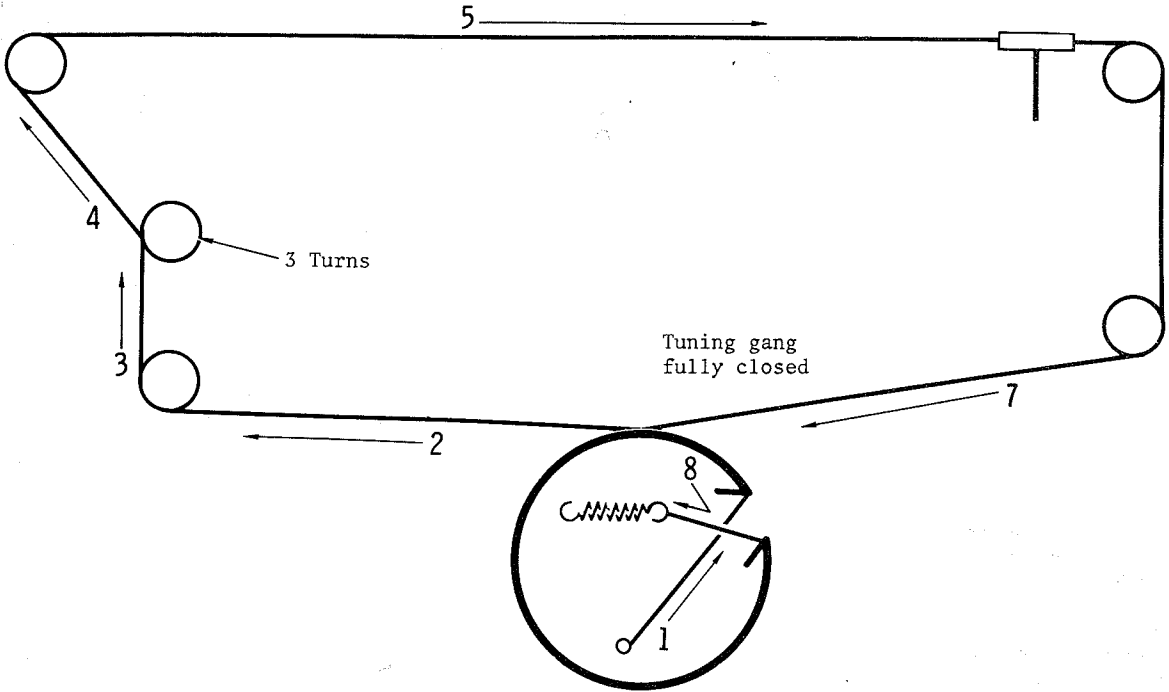


For Supplier Address See PHOTOFACT Index

REALISTIC
MODEL 12-1402



DIAL CORD STRINGING



REALISTIC
MODEL 12-1402

SET 1572 FOLDER 3

HOWARD W. SAMS & CO., INC. Indianapolis, Indiana 46206



The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. 6PL1529

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DATE 6-76

SET 1572 FOLDER 3

PARTS LIST AND DESCRIPTION
(When ordering parts, state Model, Part Number, and Description.)

SEMICONDUCTORS (Select replacement transistor for best results)

| ITEM No. | TYPE No. | MFR. PART No. | REPLACEMENT DATA | | | | | | |
|----------|----------------|---------------|---------------------------|----------------------------------|------------------|-------------------|-------------------|--------------|------------------|
| | | | GENERAL ELECTRIC PART No. | INTERNATIONAL RECTIFIER PART No. | MALLORY PART No. | MOTOROLA PART No. | RAYTHEON PART No. | RCA PART No. | SPRAGUE PART No. |
| D1 | 1S1555 | | GE-300 | D200 | PTC214 | HEPR0602 | RE 52 | SK3100 | RT-218 |
| D2 | 1S2076(1) | | GE-300 | D200 | PTC214 | HEPR0602 | RE 52 | SK3100 | RT-218 |
| D3 | 1S2076(1) | | GE-90 | D201 | PTC214 | HEPR2503 | RE 195 | SK3126 | RT-262 |
| D4 | 1N60P | | 1N34AS | 1N34A | PTC207 | HEPR9134 | RE 47 | SK3087 | RT-200 |
| D5 | 1N60P | | 1N60(7) | 1N60(7) | PTC206M(6) | HEPR9135(7) | RE 86(6) | SK3088(7) | RT-263(7) |
| D6 | WZ090 | | | | ZB9.1B | | | | RT-240 |
| | 9V Zener +5% | | GEZD-9.1 | Z1209 | PTC505 | HEPZ0412 | RE 114 | SK3060 | RT-240 |
| | 1K5855A(1) | | | | | | | | ECG139 |
| D7 | 1N60 | | 1N60 | 1N60 | PTC206 | HEPR9135 | RE 47 | SK3088 | RT-263 |
| D8 | MPS9646G, H | | GE-300 | D200 | PTC214 | HEPR0602 | RE 52 | SK3100 | RT-218 |
| D9 | MPS9646G, H | | GE-300 | D200 | PTC214 | HEPR0602 | RE 52 | SK3100 | RT-218 |
| D10 | MR9602 | | GE-504A | 804 | PTC201 | HEPR0052 | RE 49 | SK3030 | RT-213 |
| D11 | LM1862(1) | | GE-504A | 804 | PTC201 | HEPR0052 | RE 49 | SK3030 | RT-213 |
| D12 | MR9602 | | GE-504A | 804 | PTC201 | HEPR0052 | RE 49 | SK3030 | RT-213 |
| D13 | LM1862(1) | | GE-504A | 804 | PTC201 | HEPR0052 | RE 49 | SK3030 | RT-213 |
| D14 | MR9602 | | GE-504A | 804 | PTC201 | HEPR0052 | RE 49 | SK3030 | RT-213 |
| D15 | KB-162(12) | | GE-504A | 804 | PTC201 | HEPR0052 | RE 49 | SK3030 | RT-213 |
| D16 | KB-162(12) | | GE-504A | 804 | PTC201 | HEPR0052 | RE 49 | SK3030 | RT-213 |
| D17 | SR1K-2 | | GE-504A | 804 | PTC201 | HEPR0052 | RE 49 | SK3030 | RT-213 |
| IC1 | AN217BB | | | | | | | | ECG1060 |
| IC2 | AN271B | | | | | | | | |
| Q1 | 2SC1359B, C | | GE-17 | TR-21 | PTC121 | HEPS0025 | RE 9 | SK3018 | RT-108A |
| Q2 | MPS9625G, H | | GE-20 | TR-21 | PTC123 | HEPS0014 | RE 10 | SK3018 | RT-107A |
| Q3 | MPS96811, J, K | | GE-21 | TR-30 | PTC141 | HEPS0026 | RE 26 | SK3114 | RT-126A |
| Q4 | MPS96811, J, K | | GE-21 | TR-30 | PTC141 | HEPS0026 | RE 26 | SK3114 | RT-126A |
| Q5 | MPS9632J | | GE-20 | TR-24 | PTC121 | HEPS0015 | RE 13 | SK3124 | RT-172 |
| Q6 | MPS9632J | | GE-20 | TR-24 | PTC121 | HEPS0015 | RE 13 | SK3124 | RT-172 |
| Q7 | 2SC1383S, R | (5) | GE-47 | | | HEPS0015 | | SK3137 | |
| Q8 | 2SA683S, R | (5) | GE-48 | | | HEPS0019 | | SK3138 | |
| Q9 | 2SC1383S, R | (5) | GE-47 | | | HEPS0015 | | SK3137 | |
| Q10 | 2SA683S, R | (5) | GE-48 | | | HEPS0019 | | SK3138 | |
| Q401 | LM1117C | | GE-62 | TR-51 | PTC139 | HEPS0024 | RE 64 | SK3124 | RT-172 |
| | 2SC644F(1) | | GE-62 | TR-51 | PTC139 | HEPS0024 | RE 64 | SK3124 | RT-172 |
| Q402 | LM1540(1) | | GE-62 | TR-51 | PTC139 | HEPS0024 | RE 64 | SK3124 | RT-172 |
| | LM1117C | | GE-62 | TR-51 | PTC139 | HEPS0024 | RE 64 | SK3124 | RT-172 |
| Q403 | 2SC644F(1) | | GE-62 | TR-51 | PTC139 | HEPS0024 | RE 64 | SK3124 | RT-172 |
| | LM1540C | | GE-62 | TR-51 | PTC139 | HEPS0024 | RE 64 | SK3124 | RT-172 |
| Q404 | 2SC644F(1) | | GE-62 | TR-51 | PTC139 | HEPS0024 | RE 64 | SK3124 | RT-172 |
| | LM1117(1) | | GE-62 | TR-51 | PTC139 | HEPS0024 | RE 64 | SK3124 | RT-172 |

- (1) Used in some versions.
(5) Half of complementary pair (Q7 and Q8; Q9 and Q10).
(6) Matched pair.
(7) Two required - select matched pair.
(12) Varistor

ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | REPLACEMENT DATA | | | | |
|----------|----------|------------------|--------------------|---------------------------|------------------|------------------|
| | | MFR. PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No. |
| C26 | 10 10V | 1202106 | EP15-10 | PC10-25 | VTT10A25 | EV-1222 |
| C27 | 100 10V | 1202107 | EP15-100 | PC100-10 | VTT100E10 | EV-1130 |
| C28 | 10 10V | 1202106 | EP15-10 | PC10-25 | VTT10A25 | EV-1222 |
| C34 | 10 10V | 1202106 | EP15-10 | PC10-25 | VTT10A25 | EV-1222 |
| C41 | 4.7 10V | 1202475 | EP30-5 | PC5-50 | VTT47A50 | EV-1319 |
| C42 | 10 10V | 1202106 | EP15-10 | PC10-25 | VTT10A25 | EV-1222 |
| C47 | 4.7 10V | 1202475 | EP30-5 | PC5-50 | VTT47A50 | EV-1319 |
| C48 | 100 25V | 1204107 | EP30-100 | PC100-25 | VTT100G25 | EV-1330 |
| C49 | 100 25V | 1204107 | EP30-100 | PC100-25 | VTT100G25 | EV-1330 |
| C50 | 470 16V | 1203477 | EP15-500 | PC500-16 | VTT470J16 | EV-1250 |
| C53 | 1500 35V | 1200158 | | | TC50150A | TVA-1318 |
| C54 | 1000 25V | 1204108 | EP30-1000 | WBR1000-25 | VTT1000M25 | EV-1360 |
| C66 | 100 16V | 1203107 | EP15-100 | PC100-16 | VTT100F16 | EV-1230 |
| C67 | 100 16V | 1203107 | EP15-100 | PC100-16 | VTT100F16 | EV-1230 |
| C72 | 47 10V | 1202476 | EP15-50 | PC50-16 | VTT47D16 | EV-1226 |
| C73 | 47 10V | 1202476 | EP15-50 | PC50-16 | VTT47D16 | EV-1226 |
| C76 | 470 10V | 1202477 | EP15-500 | PC500-16 | VTT470J16 | EV-1150 |
| C77 | 470 10V | 1202477 | EP15-500 | PC500-16 | VTT470J16 | EV-1150 |
| C403 | 4.7 25V | 1204475 | EP30-5 | PC5-50 | VTT47A50 | EV-1319 |
| C404 | 4.7 25V | 1204475 | EP30-5 | PC5-50 | VTT47A50 | EV-1319 |
| C407 | 10 16V | 1203106 | EP15-10 | PC10-25 | VTT10A25 | EV-1222 |
| C408 | 10 16V | 1203106 | EP15-10 | PC10-25 | VTT10A25 | EV-1222 |
| C409 | 220 16V | 1203227 | EP15-250 | PC250-25 | VTT220G16 | EV-1240 |
| C410 | 220 25V | 1204227 | EP30-250 | PC250-25 | VTT220H25 | EV-1340 |

PARTS LIST AND DESCRIPTION (CONTINUED)
(When ordering parts, state Model, Part Number, and Description.)

CAPACITORS

| ITEM No. | RATING | MFR. PART No. | REPLACEMENT DATA | | | |
|----------|---------------|---------------|--------------------|---------------------------|------------------|------------------|
| | | | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | MALLORY PART No. | SPRAGUE PART No. |
| C1 | 50 | | DTZ-50 | NP050 | CN0450 | 10TCC-Q50 |
| C2 | .02 | | DC-203 | | MAG5012 | 2SS-S20 |
| C3 | .04 | | | | GP140 | 5GA-S40 |
| C4 | .04 | | | | GP140 | 5GA-S40 |
| C5 | .01 | | DC-103 | GP10000 | MAG5011 | 2SS-S10 |
| C6 | .15 | | DTZ-15 | NP015 | CN0415 | 10TCC-Q15 |
| C7 | 3 | | DTZ-3R3 | NP03P3 | CN0533 | 10TCC-V33 |
| C8 | 30 | | | | | 10TCC-Q30 |
| C9 | 3 | | DTZ-3R3 | NP03P3 | CN0533 | 10TCC-V33 |
| C10 | 300 | | DD-301 | GP300 | GP330 | 10TS-T30 |
| C11 | .01 | | DC-103 | GP10000 | MAG5011 | 2SS-S10 |
| C12 | .01 | | DC-103 | GP10000 | MAG5011 | 2SS-S10 |
| C13 | .04 | | DC-103 | GP10000 | GP140 | 5GA-S40 |
| C14 | .01 | | DC-103 | GP10000 | MAG5011 | 2SS-S10 |
| C15 | .01 | | | | | |
| C16 | .04 | | | | GP140 | 5GA-S40 |
| C17 | .04 | | | | GP140 | 5GA-S40 |
| C18 | .04 | | | | | |
| C19 | 300 | | DD-301 | GP300 | GP330 | 10TS-T30 |
| C20 | .02 | | DC-203 | | MAG5012 | 2SS-S20 |
| C21 | .02 | | DTZ-4R7 | NP04P7 | CN0537 | 10TCC-V47 |
| C22 | .02 | | DC-203 | | MAG5012 | 2SS-S20 |
| C23 | .02 | | DC-203 | | MAG5012 | 2SS-S20 |
| C24 | .100 | | DTZ-100 | NP0100 | CN0310 | 10TCC-T10 |
| C25 | .01 | | DC-103 | GP10000 | MAG5011 | 2SS-S10 |
| C29 | .01 | | DC-103 | GP10000 | MAG5011 | 2SS-S10 |
| C30 | .0047 | | CPJ-472 | DPMS6D47 | EWFA1A247 | 1PB-D47 |
| C31 | .04 | | | | GP140 | 5GA-S40 |
| C32 | .100 | | DD-301 | GP300 | GP330 | 10TS-T30 |
| C33 | .300 | | DD-301 | GP300 | GP330 | 10TS-T30 |
| C35 | .047 | | | DPMS2S47 | EWFA1A147 | 1PB-S47 |
| C36 | .6 | | DTZ-6R8 | NP06P8 | CN0568 | 10TCC-V68 |
| C37 | .01 | | DC-103 | GP10000 | MAG5011 | 2SS-S10 |
| C38 | .0047 50V 10% | | CPR-4700J | CD19FD472J03 | SX247 | 424ME4701J501 |
| C39 | .0022 | | CPR-2200J | CD19FD222J03 | SX222 | 424ME2201J501 |
| C40 | .022 | | CPJ-223 | DPMS2S22 | EWFA1A122 | 1PB-S22 |
| C43 | .0033 10% | | CPJ-332 | DPMS6D33 | EWFA1A233 | 1PB-D33 |
| C44 | .0033 10% | | CPJ-332 | DPMS6D33 | EWFA1A233 | 1PB-D33 |
| C45 | .0015 | | DD-152 | | GP215 | 2SS-D15 |
| C46 | .0018 | | CPR-2000J | DPMS6D2 | PVC622 | 6PS-D20 |
| C51 | .022 50V | | CPJ-223 | DPMS2S22 | EWFA1A122 | 1PB-S22 |
| C52 | .022 50V | | CPJ-223 | DPMS2S22 | EWFA1A122 | 1PB-S22 |
| C55 | .04 | | | | GP140 | 5GA-S40 |
| C56 | .60 | | | | | |
| C57 | .60 | | | | | |
| C58 | .01 | | DC-103 | GP10000 | MAG5011 | 2SS-S10 |
| C59 | .01 | | DC-103 | GP10000 | MAG5011 | 2SS-S10 |
| C60 | .10 | | DTZ-10 | NP010 | CN0410 | 10TCC-Q10 |
| C62 | .0018 | | CPR-2000J | DPMS6D2 | PVC622 | 6PS-D20 |
| C63 | .0018 | | CPR-2000J | DPMS6D2 | PVC622 | 6PS-D20 |
| C64 | .047 50V | | | DPMS2S47 | EWFA1A147 | 1PB-S47 |
| C65 | .047 50V | | | DPMS2S47 | EWFA1A147 | 1PB-S47 |
| C68 | .470 | | DD-471 | GP470 | GP347 | 10TS-T47 |
| C69 | .470 | | DD-471 | GP470 | GP347 | 10TS-T47 |
| C70 | .100 | | DTZ-100 | NP0100 | CN0310 | 10TCC-T10 |
| C71 | .100 | | DTZ-100 | NP0100 | CN0310 | 10TCC-T10 |
| C74 | .01 50V | | CPJ-103 | DPMS4S1 | EWFA1A110 | 1PB-S10 |
| C75 | .01 50V | | CPJ-103 | DPMS4S1 | EWFA1A110 | 1PB-S10 |
| C78 | .02 | | DC-203 | | MAG5012 | 2SS-S20 |
| C79 | .300 | | DD-301 | GP300 | GP330 | 10TS-T30 |
| C80 | .02 | | DC-203 | | MAG5012 | 2SS-S20 |
| C81 | .10 | | DTZ-10 | NP010 | CN0410 | 10TCC-Q10 |
| C401 | .0068 10% | | DD-391 | GP390 | GP339 | 10TS-T39 |
| C402 | .0068 10% | | DD-391 | GP390 | GP339 | 10TS-T39 |
| C405 | .0068 10% | | CPJ-682 | DPMS6D68 | EWFA1A268 | 1PB-D68 |
| C406 | .0068 10% | | CPJ-682 | DPMS6D68 | EWFA1A268 | 1PB-D68 |
| C411 | .04 | | | | GP140 | 5GA-S40 |
| TC1 | Trimmer | (2) | | | | |
| TC2 | Trimmer | (2) | | | | |
| TC3 | Trimmer | (2) | | | | |
| TC4 | Trimmer | (2) | | | | |
| VC | Tuning Gang | (2) | | | | |

- (1) Not used in some versions.
(2) Part of VC Tuning gang.

CONTROLS (All wattages 1/2 watt, or less, unless listed)

| ITEM No. | FUNCTION | RESISTANCE | REPLACEMENT DATA | | | |
|----------|----------------|------------|----------------------|--|---|--|
| | | | MFR. PART No. | CENTRALAB PART No. | CLAROSTAT PART No. | MALLORY PART No. |
| VR1 | Balance | 1meg | P-2049 V-0523 (5) | F1-1Meg (1), SSK100 | A47-1Meg-S (1), KSS-3 or [NP-1Meg-S (1), UP-C-400] | RU16L, SL36, SL1500 or [UA16L (1), SK1000] or U54 (1) |
| VR2-1 | Tone - Right | 1meg | P-2050 | F1-1Meg (1), R1-1Meg, SSK100, CPL2 | NP-1Meg-S (1), NR-1Meg-S, UP-C-400, DC-2 | P16L, 3014 (1), RU16L, CS3500 |
| VR2-2 | Tone - Left | 1meg | V-0521 (5) | F2-1Meg (1), R2-1Meg, SSK100, CPL2 | NP-1Meg-Z (1), NR-1Meg-Z, UP-C-400, DC-2 | |
| VR3-1 | Volume - Right | 1meg | P-1527 | | | P16A, 3014 (1), RU16A, CS3500 |
| VR3-2 | Volume - Left | 1meg | V-0522 (5) | | | |

- (1) Enlarge mounting hole.
(5) Number on unit.

PARTS LIST AND DESCRIPTION
(When ordering parts, state Model, Part Number, and Description.)

COILS (RF-IF)

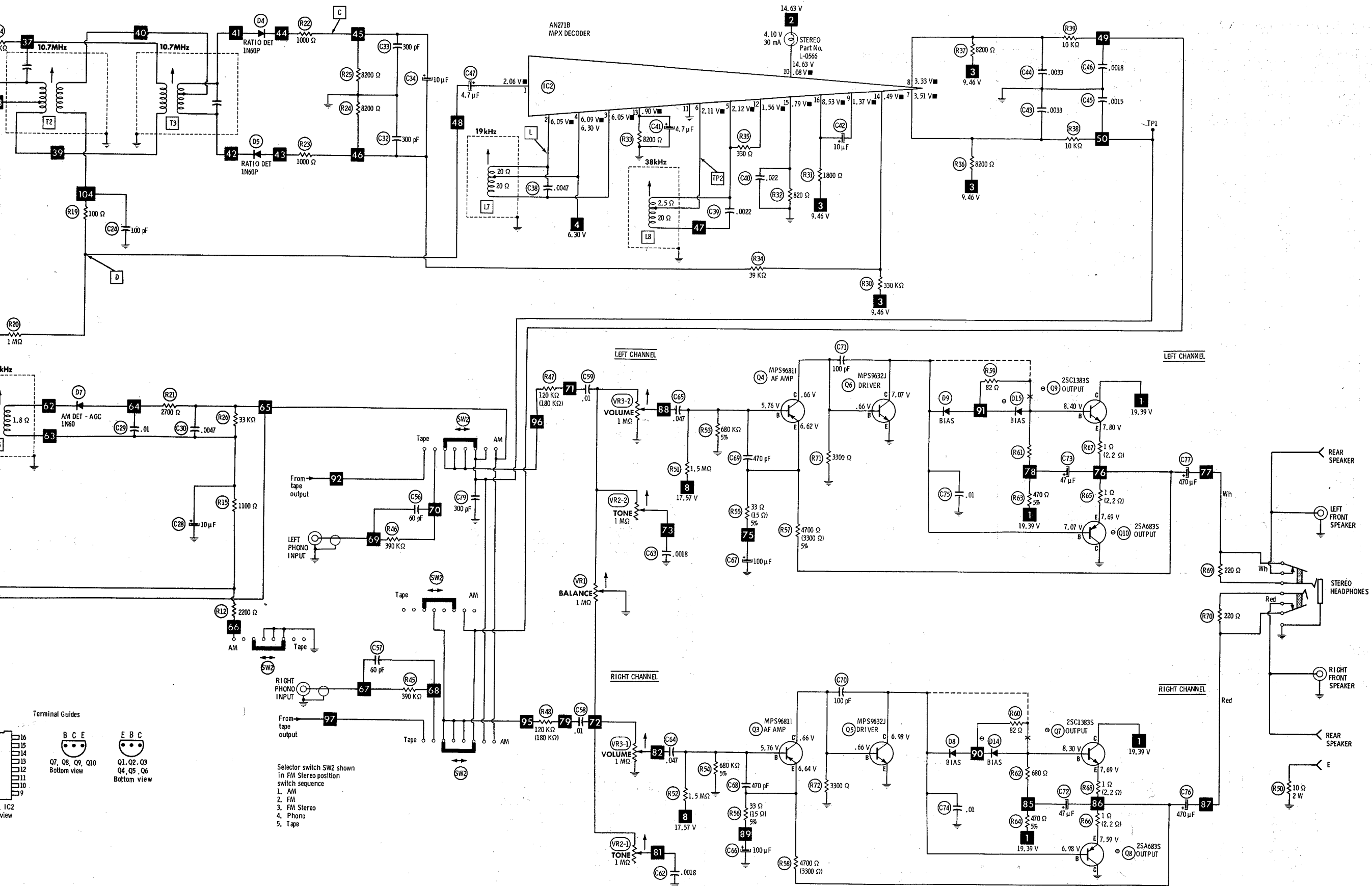
| ITEM No. | FUNCTION | |
|----------|----------------------|-----|
| L1 | FM Antenna | CA- |
| L2 | FM RF | CA- |
| L3 | RF Choke | CA- |
| L4 | FM Oscillator | CA- |
| L5 | Loopstick | CA- |
| L6 | AM Oscillator | CA- |
| L7 | 19kHz Input | CB- |
| L8 | 38kHz Output | CB- |
| T1 | FM Input Input | CA- |
| T2 | Ratio Detector (Pri) | CA- |
| T3 | Ratio Detector (Sec) | CA- |
| T4 | AM Input IF (Sec) | CA- |
| T5 | AM Output IF | CA- |
| T7 | AM Input IF (Pri) | CA- |

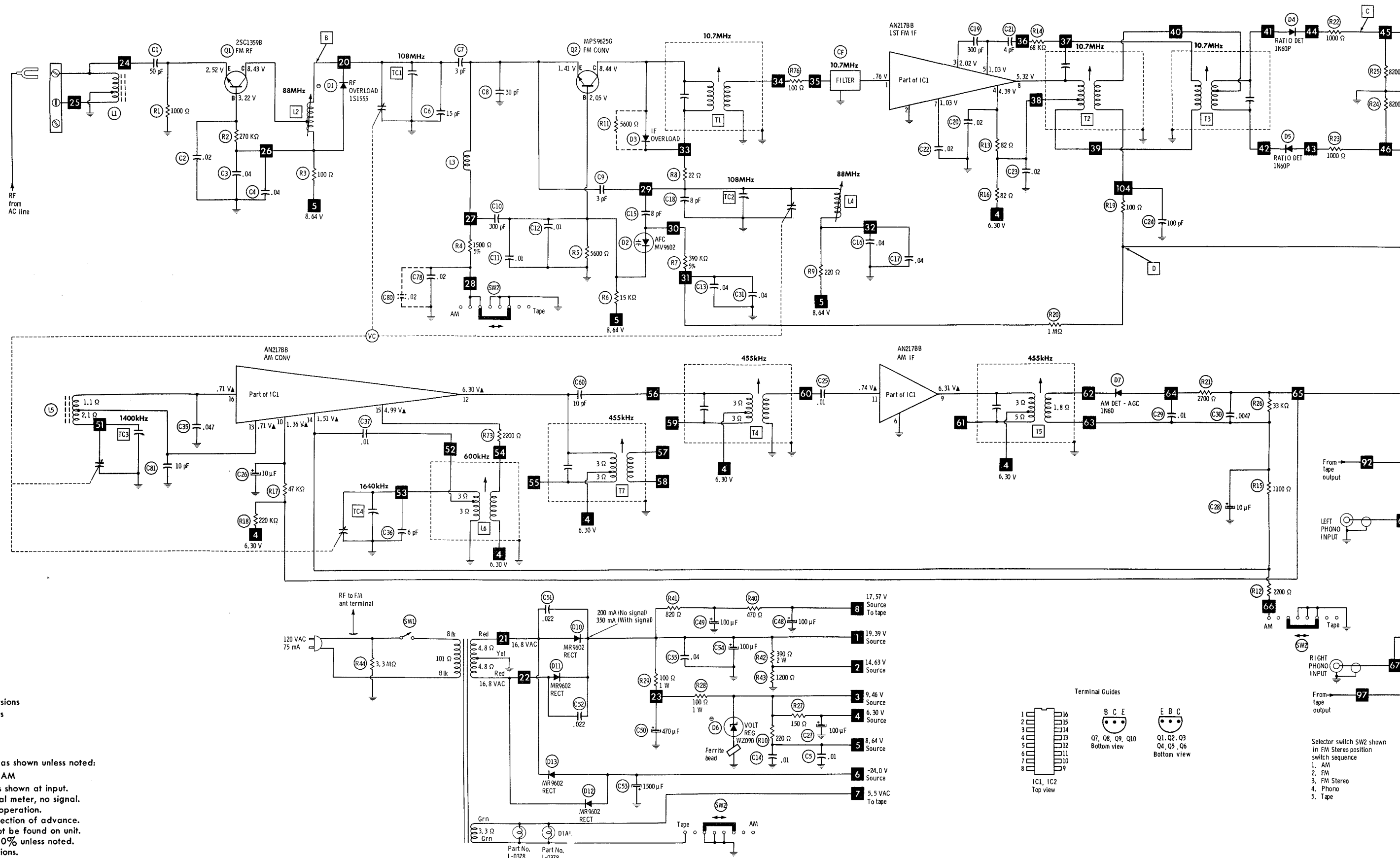
TRANSFORMER (Power)

| ITEM No. | RATING | |
|----------|-----------------------|---------------------------|
| | PRI. | SEC. 1 |
| T6 | 120V AC 0 .09A AC | 33.7V AC CT @ 1.09A DC |
| | SEC. 2 | SEC. 3 |
| | 5.5V AC @ .245A AC | |

SPEAKER

| ITEM No. | TYPE |
|----------|--------------|
| SP1 | 4" PM 8 ohms |
| SP2 | 4" PM 8 ohms |

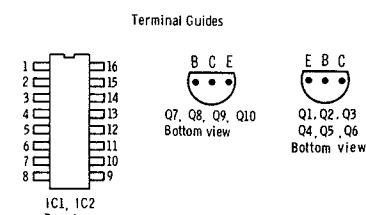


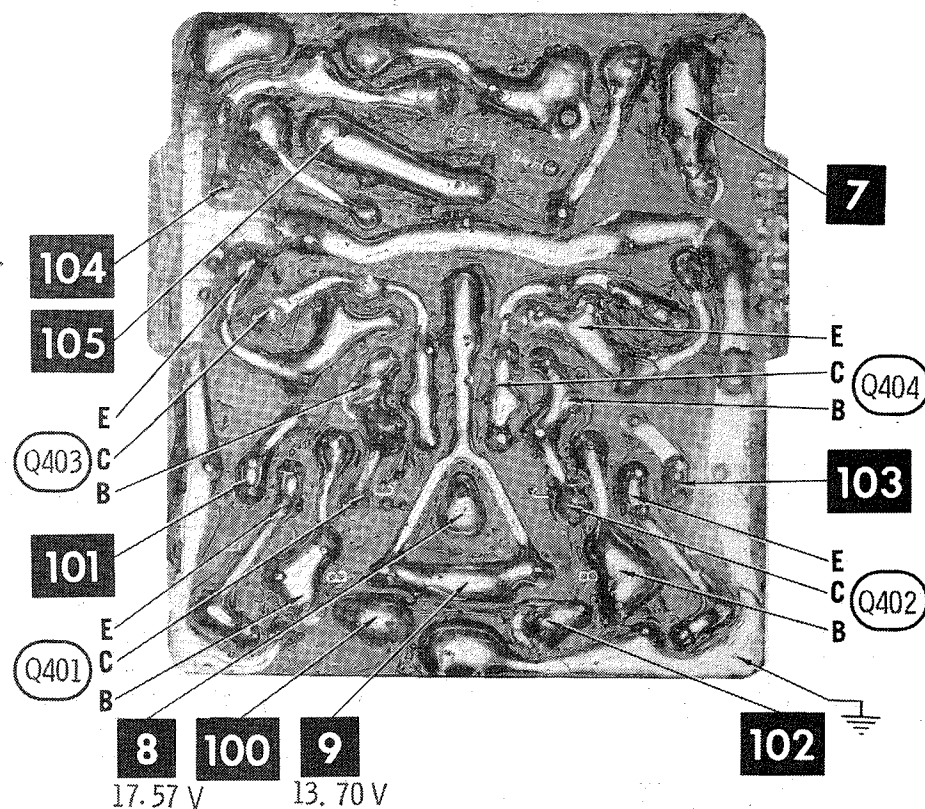
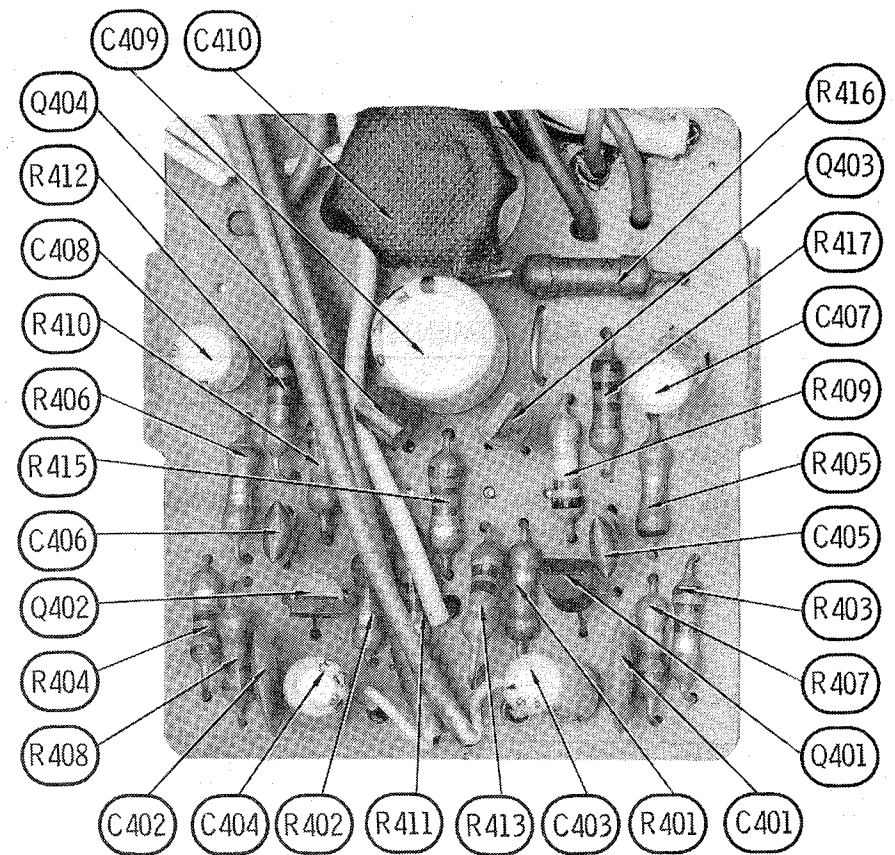


* Circuitry not used in some versions
 --- Circuitry used in some versions
 ⊕ See parts list
 * Nominal value
 ⏏ Ground
 Measurements with switching as shown unless noted:
 ■ FM Stereo signal ▲ AM
 Supply voltage maintained as shown at input.
 Voltages measured with digital meter, no signal.
 Controls adjusted for normal operation.
 Arrow at control indicates direction of advance.
 Terminal identification may not be found on unit.
 Resistors are 1/2W or less, 10% unless noted.
 Value in () used in some versions.

A PHOTOFAC STANDARD NOTATION SCHEMATIC
 WITH CIRCUITRACE®

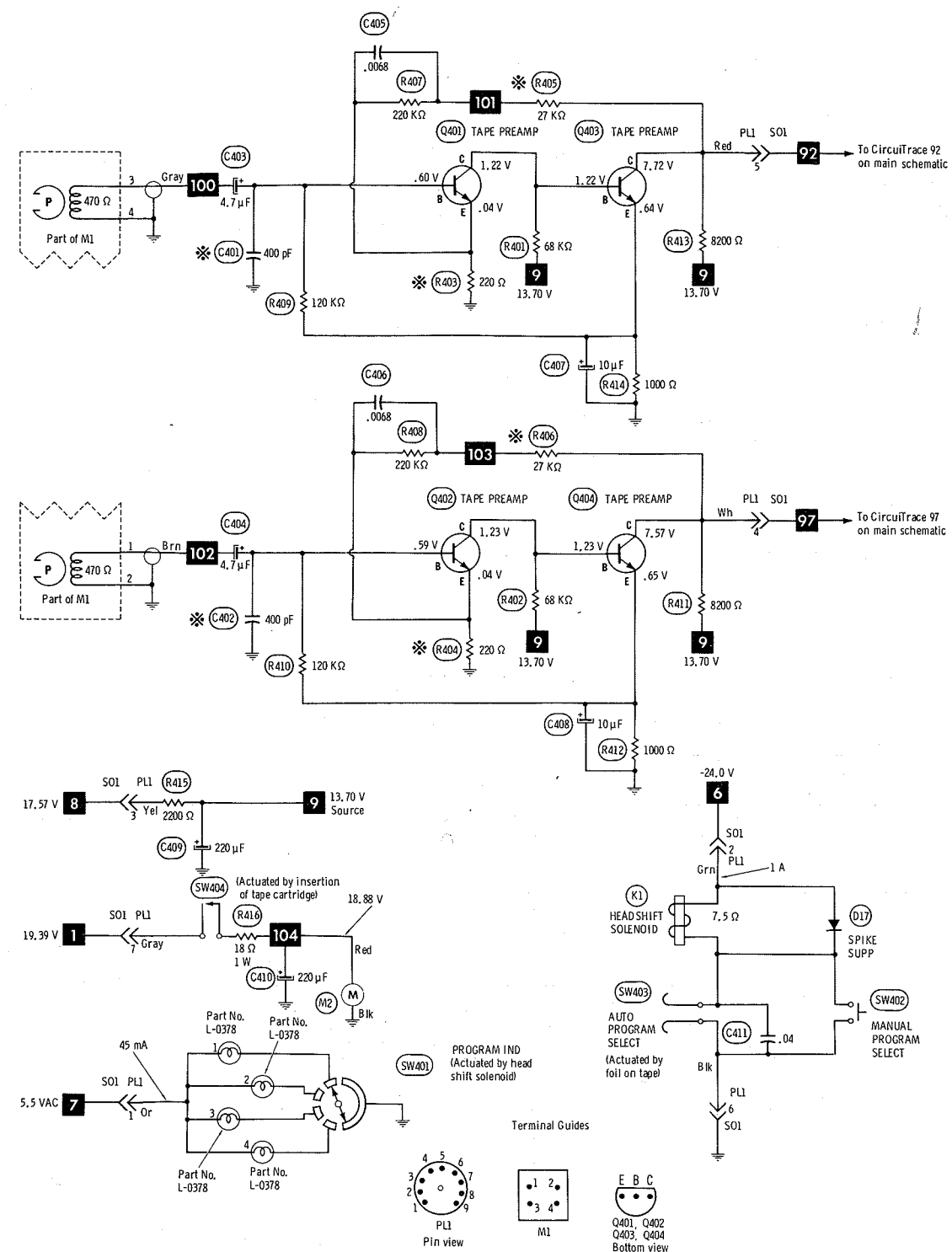
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TAPE BOARD A Howard W. Sams **CIRCUITRACE®** Photo

NOTE: DEMAGNETIZE HEADS AFTER SERVICING



—* Circuitry not used in some versions
 --- Circuitry used in some versions
 Ⓢ See parts list
 * Nominal value
 Ⓢ Ground

A PHOTOFACT STANDARD NOTATION SCHEMATIC
 WITH **CIRCUITRACE®**

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Measurements with switching as shown unless noted:


■ FM Stereo signal ▲ AM

Supply voltage maintained as shown at input.
 Voltages measured with digital meter, no signal.
 Controls adjusted for normal operation.
 Arrow at control indicates direction of advance.
 Terminal identification may not be found on unit.
 Resistors are 1/2W or less, 10% unless noted.
 Value in () used in some versions.

ALIGNMENT INSTRUCTIONS

CAUTION: Use isolation transformer or observe polarity when connecting test equipment. Connect low sides of generator and indicator to ground unless specified otherwise. Maintain line voltage at 120V AC. Allow a 15-minute warm-up period. Use only enough generator output to obtain a suitable indication. Suggested alignment Tools: GC ELECTRONICS:

L6, T1 thru T5, T7, T89293, 9294



AM ALIGNMENT—SELECTOR IN AM POSITION

| Connect generator across loop fashioned of several turns of wire. Set volume at maximum. | | | | |
|--|---------------------------|-----------------------------------|------------|--|
| GENERATOR FREQUENCY | RADIO DIAL SETTING | INDICATOR | ADJUST | REMARKS |
| 455kHz 400-hertz Modulation | Tuning gang fully open | Output meter across voice coil | T5, T4, T7 | Adjust for maximum. Repeat until no further improvement is noted. |
| 600kHz | 600kHz | " | L6 | Adjust for maximum. |
| 1640kHz | 1640kHz | " | TC4 | Adjust for maximum. |
| 1400kHz | 1400kHz | " | TC3 | Adjust for maximum. Repeat AM alignment until no further improvement is noted. |

FM IF ALIGNMENT USING AM SIGNAL GENERATOR—SELECTOR IN FM POSITION

| High side of generator thru .001uF to point B. | | | | |
|--|---------------------------|------------------------------|--------|---|
| GENERATOR FREQUENCY | RADIO DIAL SETTING | INDICATOR | ADJUST | REMARKS |
| 10.7MHz Unmodulated | Point of non-interference | DC probe of VTVM to point C. | T2, T1 | Adjust for maximum. |
| " | " | DC probe of VTVM to point D. | T3 | Adjust for zero reading. A positive or negative reading will be obtained on either side of correct setting. |

FM IF ALIGNMENT USING FM SIGNAL GENERATOR—SELECTOR IN FM POSITION

| High side of generator thru .001uF to point B. Use only enough marker signal for indication. Use 60-hertz, frequency-modulated signal, 450kHz sweep. Use 60-hertz sawtooth voltage in scope for horizontal deflection. | | | | |
|--|---------------------------|---------------------------------|--------|--|
| GENERATOR FREQUENCY | RADIO DIAL SETTING | INDICATOR | ADJUST | REMARKS |
| 10.7MHz 450kHz Sweep | Point of non-interference | Vert input of scope to point C. | T2, T1 | Disconnect stabilizing capacitor C34. Adjust for maximum gain and symmetry of response similar to Fig. 1 with markers as shown. Reconnect C34. |
| " | " | Vert input of scope to point D. | T3 | Adjust T3 to place marker at center of S curve similar to Fig. 2. Readjust T2 for maximum amplitude and straightness of line. |

FM RF ALIGNMENT—SELECTOR IN FM POSITION

| Connect generator across antenna terminals with 120-ohm carbon resistor in series with each lead. Adjustment of coils by bending should not be attempted unless the coil is deformed or replaced. | | | | |
|---|--------------------|------------------------------|----------|---|
| GENERATOR FREQUENCY | RADIO DIAL SETTING | INDICATOR | ADJUST | REMARKS |
| 88MHz Unmodulated | 88MHz | DC probe of VTVM to point C. | L4, L2 | Adjust for maximum. |
| 108MHz Unmodulated | 108MHz | " | TC2, TC1 | Adjust for maximum. Repeat FM RF steps until no further improvement is noted. |

FM STEREO MULTIPLEX ALIGNMENT USING FM STEREO SIGNAL GENERATOR (± .0001% ACCURACY)

| High side of generator thru 47K to point D. | | | |
|---|--|--------|------------------------------------|
| GENERATOR FREQUENCY | INDICATOR | ADJUST | REMARKS |
| 19kHz | Vert input of scope thru 47K to point L. | L7 | Adjust for maximum. |
| 19kHz | Vert input of scope thru 47K to point TP2. | L8 | Adjust for maximum 38kHz response. |

CLEANING

Clean all tape contact surfaces with a soft, lint-free material and head cleaner or methyl alcohol. Use alcohol to remove oil and grease from all driving surfaces.

CAUTION: Avoid getting head cleaner on any plastic surface.

LUBRICATING

Bearings are oil-less type and do not need lubrication. Lubricate bushings lightly with #20 machine oil. Use a light film of nonhardening grease on cam surfaces.

HEAD DEMAGNETIZING
Demagnetize head when unit is serviced. Avoid using magnetic materials near head.

ADJUSTMENTS

| ADJUST | REMARKS |
|--------------|---|
| Head Azimuth | Play a test cartridge and adjust B1 for maximum on an AC VTVM across output. |
| Head Height | Play a test cartridge, follow instructions with cartridge, and adjust B2 for proper response. |

TROUBLE CHART

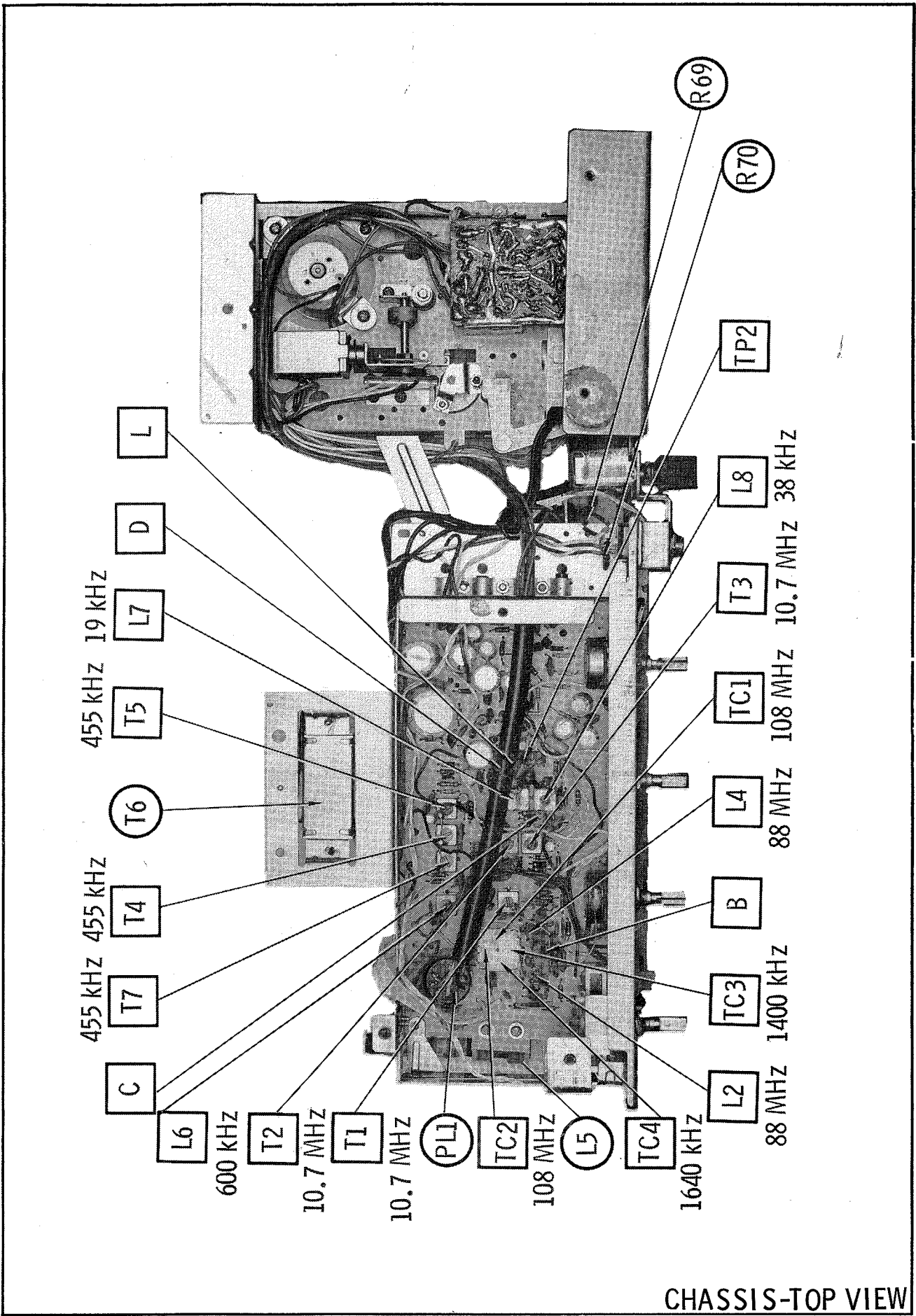
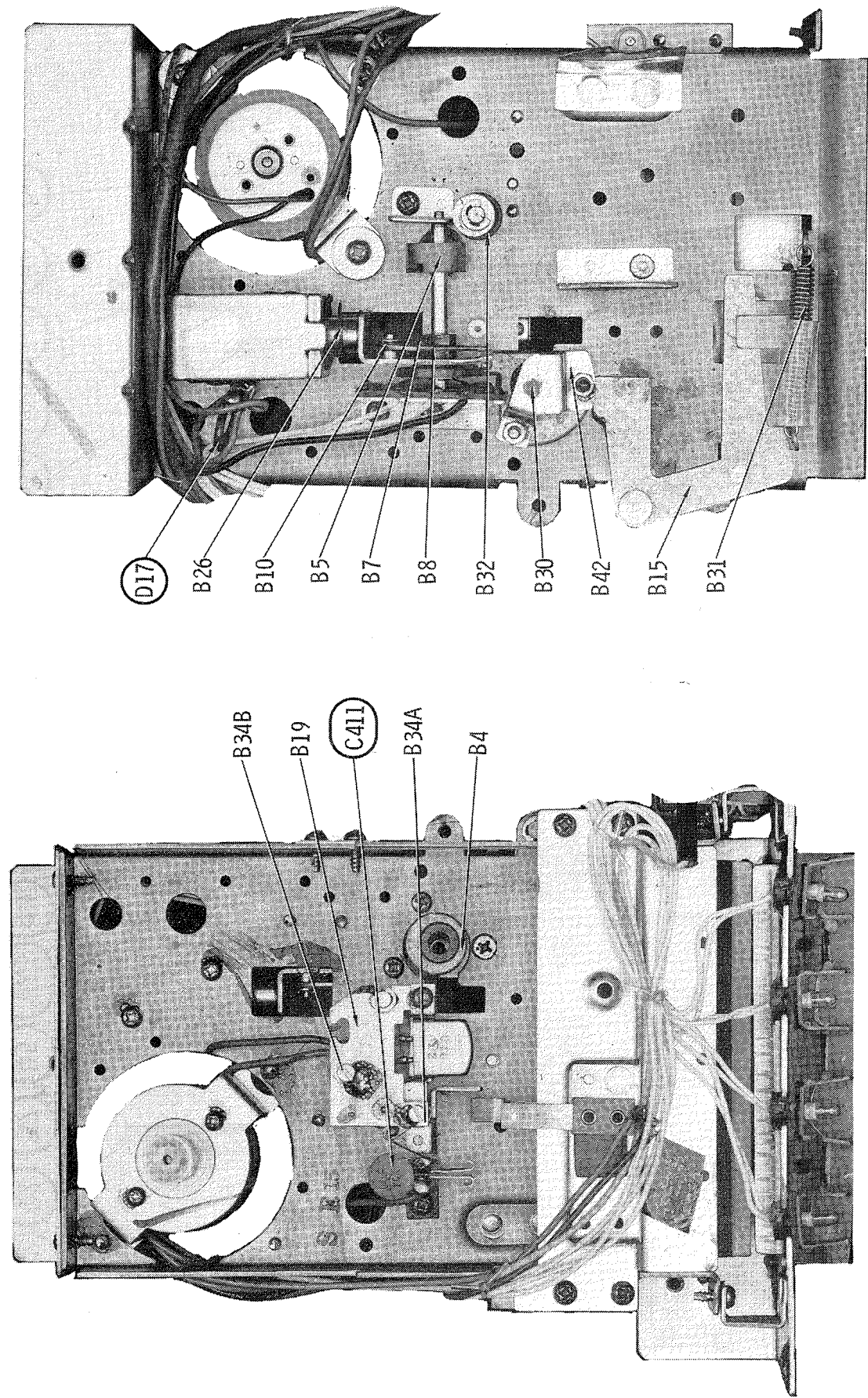
| SYMPTOM | REMARKS |
|-----------------------------------|---|
| Capstan does not rotate. | Belt (B13) dirty, worn, or broken. Assembly (B4) binding. Motor defective or not supplied with power. |
| Track-shift mechanism inoperative | Switch (SW403) dirty. Cam (B5) binding or worn. Pawls (B7) and (B8) worn. Spring (B10) weak or broken. Assembly (B19) binding. Solenoid (K1) defective or not supplied with power. Cartridge defective. |
| Sound weak or distorted | Head dirty, misaligned, or defective. Cartridge defective. Amplifiers defective. |
| Tape is pulled from cartridge. | Cartridge defective. Capstan dirty or scored. |

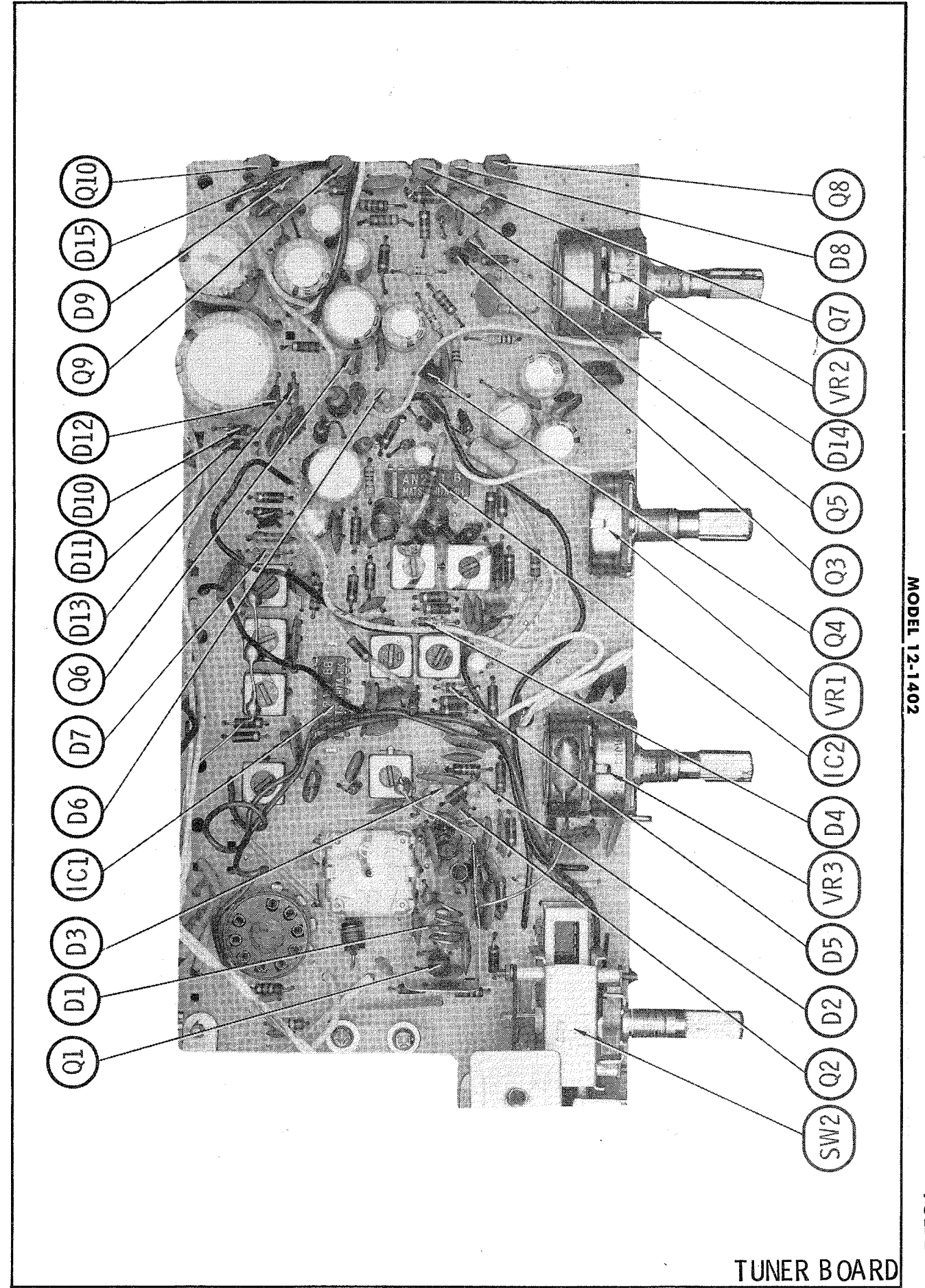
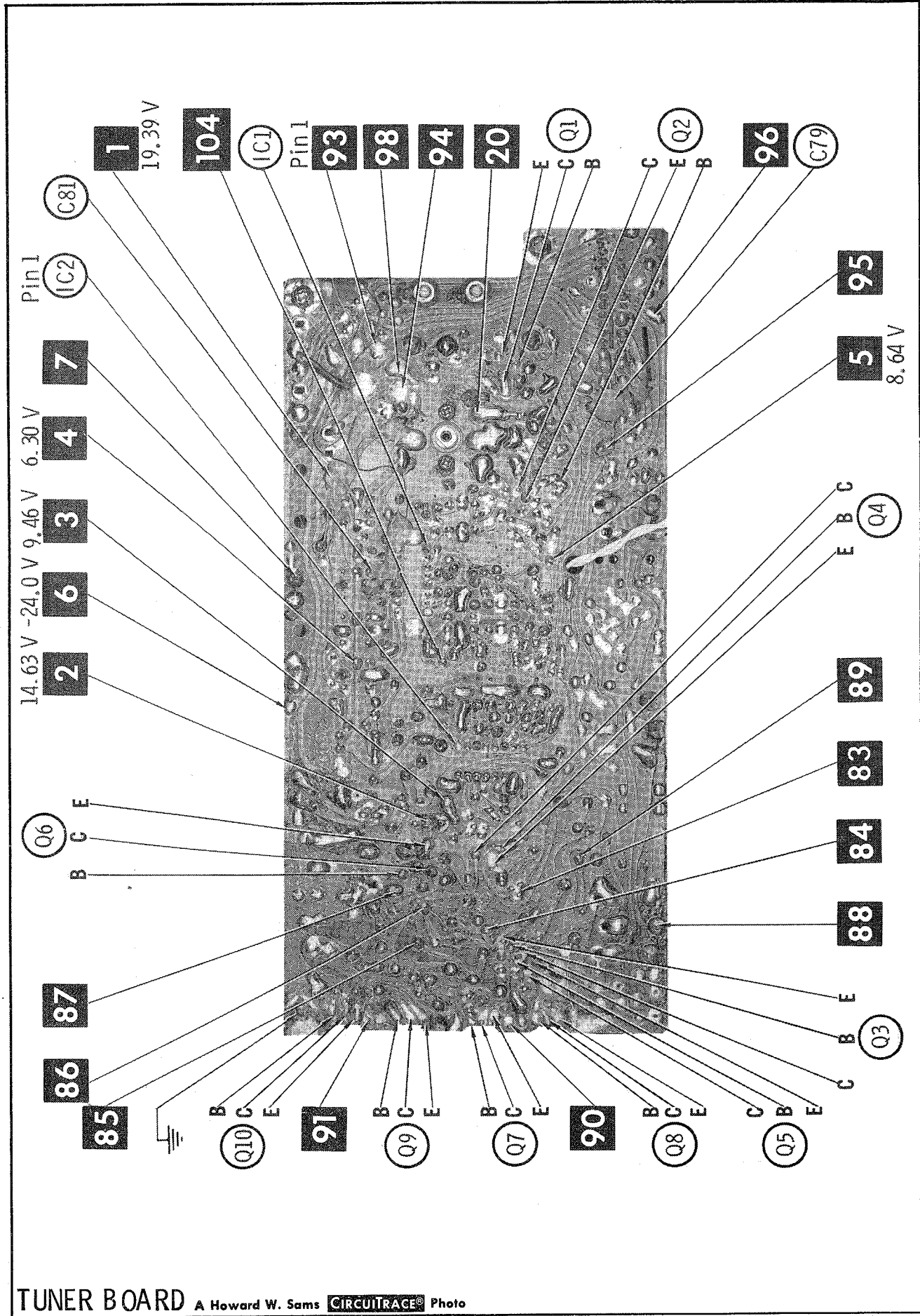
MECHANICAL PARTS LIST

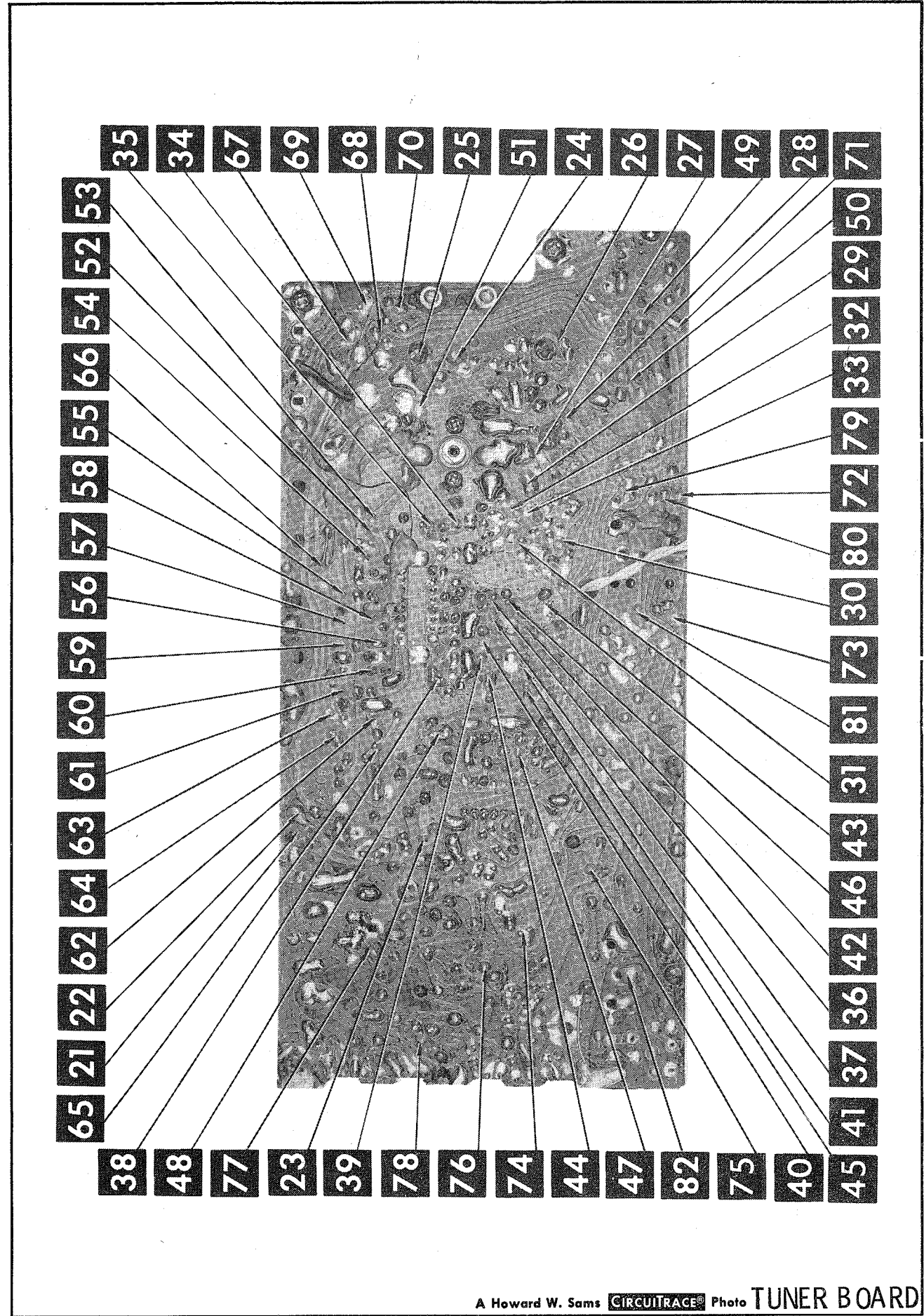
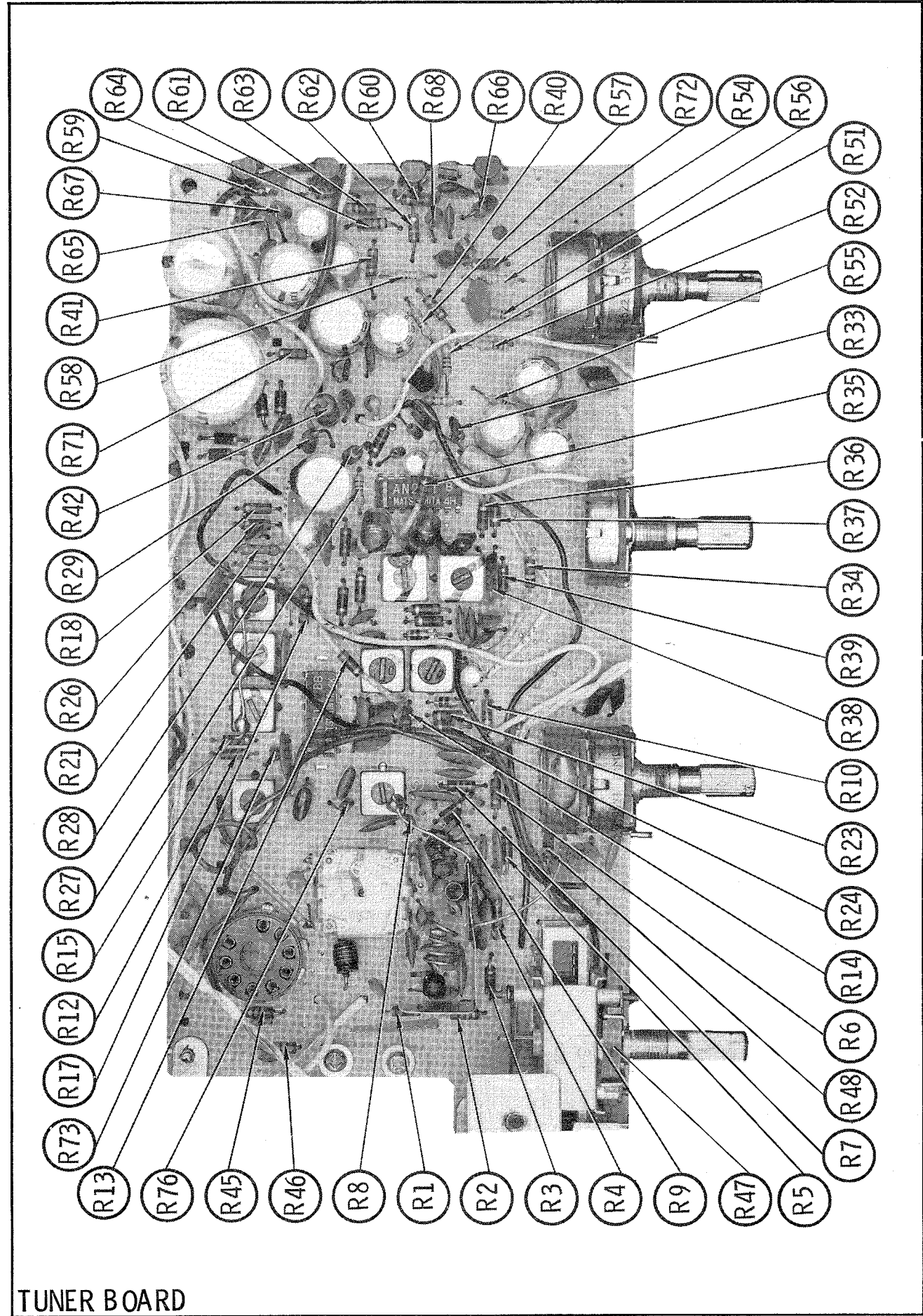
| REF. NO. | PART NO. | DESCRIPTION | REF. NO. | PART NO. | DESCRIPTION |
|----------|----------|-----------------------------|----------|----------|-----------------------|
| B3 | RA-3216 | Flywheel | B19 | HB-3692 | Head Shifting Plate |
| B4 | RA-3217 | Flywheel Housing Assembly | B26 | RB-5362 | Solenoid Spring |
| B5 | RT-0170 | Track Changing Cam Assembly | B30 | HB-3694 | Thrust Bearing |
| B7 | HB-3688 | Pull Pawl | B31 | RB-5363 | Detent Spring |
| B8 | HB-3689 | Push Pawl | B32 | RB-5364 | Head Lifting Spring |
| B10 | RB-5361 | Pawl Spring | B34A | RB-5365 | Azimuth Spring |
| B13* | B-6287* | Flywheel Drive Belt* | B34B | RB-5365 | Height Tension Spring |
| B15 | HB-3691 | Cartridge Detent Arm | B42 | 23W8257 | Flywheel Retainer Arm |

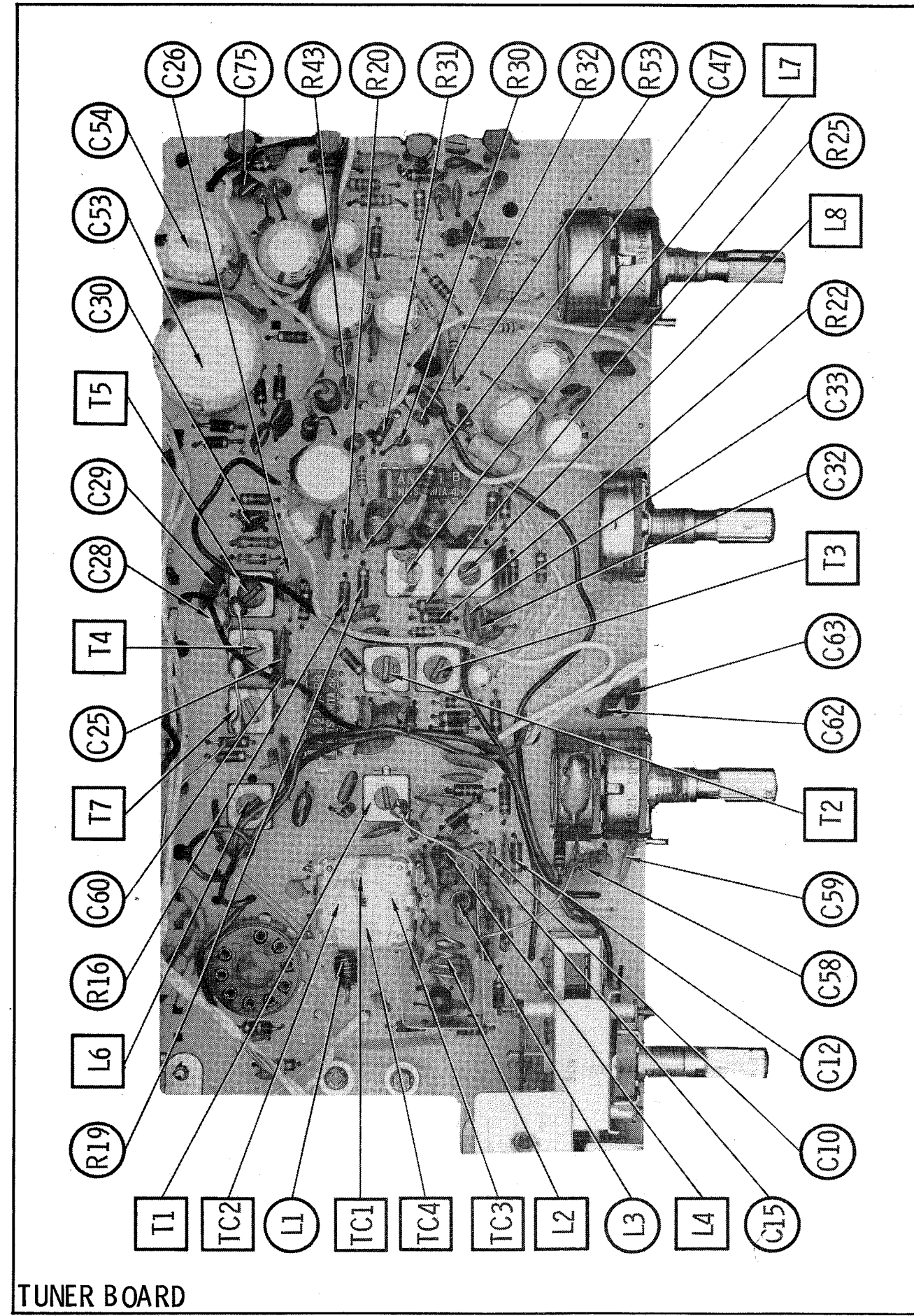
* Flywheel Drive Belt - E-V/GAME Replacement Number 1424-31.
WALSCO Replacement Number 1424-31.

TAPE CHASSIS

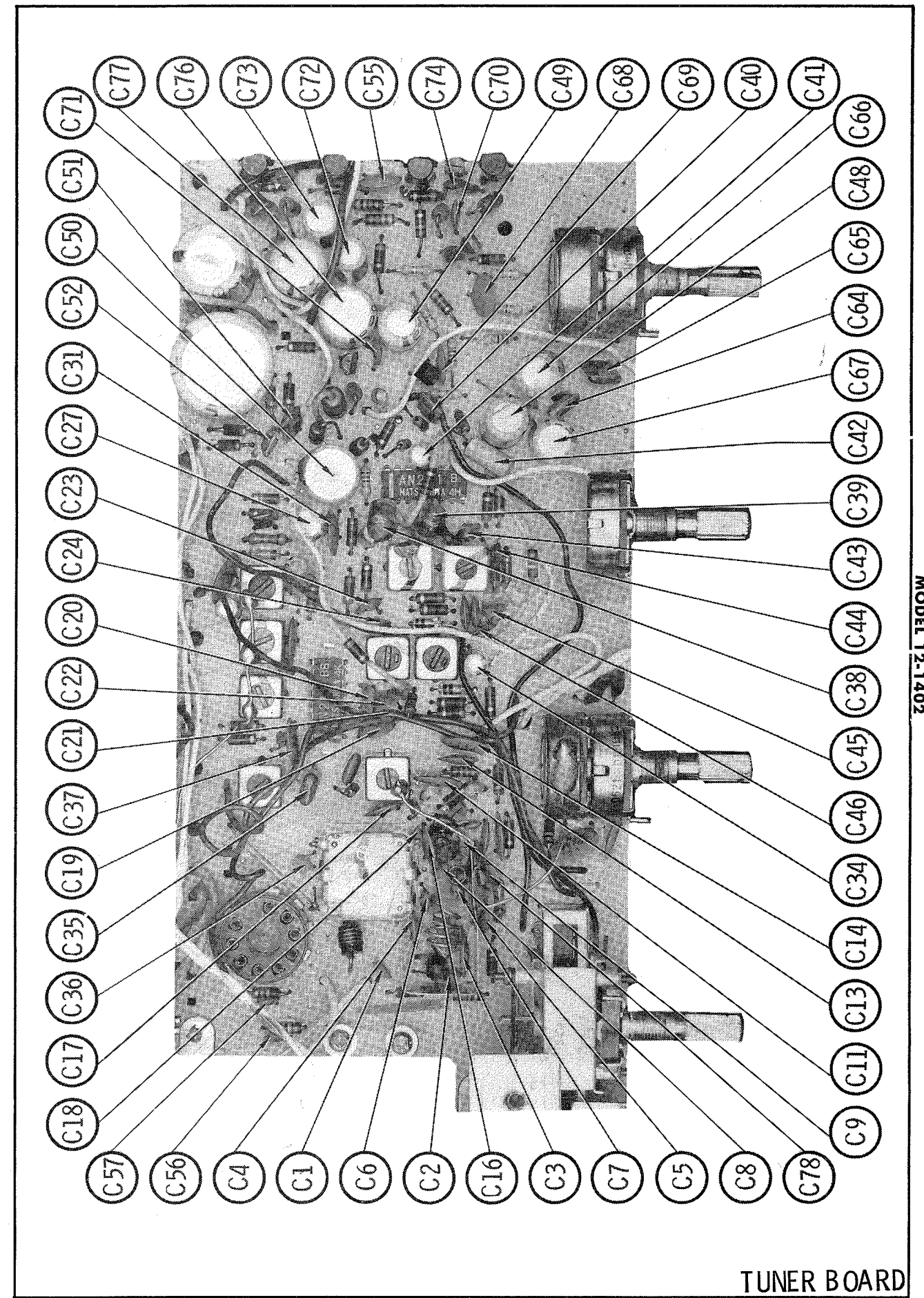








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